

Serial No. 10/565,809

Docket No. YHK-0155

Amendment dated February 9, 2009

Reply to Office Action of October 7, 2008

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning on page 2, line 23 and ending on page 3, line 4 with the following amended paragraph:

Herein, the phosphor might include a red phosphor, a green phosphor and a blue phosphor. Each phosphor is spread along the inner wall of each barrier rib 8. For example, the red phosphor might be $(Y, Gd)BO_3:Eu$ phosphor, the green phosphor might be $Zn_2SiO_4:Mn$ (hereinafter referred to as ZSM) phosphor, and the blue phosphor might be $BaMgAl_{10}O_{17}:Eu$ phosphor.

Please replace the paragraph beginning on page 4, line 11 with the following amended paragraph:

In order to achieve these and other objects of the invention, a green phosphor according to one aspect of the present invention is composed of $Zn_2SiO_4:Mn$ phosphor, $(Y, Gd)BO_3:Tb$ phosphor and $BaAl_{12}O_{19}:Mn$ phosphor, and the mixing rate of $BaAl_{12}O_{19}:Mn$ phosphor to the total weight is 1~25 wt %.

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Please replace the paragraph beginning on page 4, line 17 with the following amended paragraph:

A green phosphor according to another aspect of the present invention is composed of $\text{Zn}_2\text{SiO}_4\text{:Mn}$ phosphor, $(\text{Y}, \text{Gd})\text{BO}_3\text{:Tb}$ phosphor and $\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$ phosphor, and the mixing rate of the $(\text{Y}, \text{Gd})\text{BO}_3\text{:Tb}$ phosphor to the $\text{Zn}_2\text{SiO}_4\text{:Mn}$ phosphor is 25~80 wt %.

Please replace the paragraph beginning on page 4, line 22 with the following amended paragraph:

Herein, the mixing rate of the $\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$ phosphor to the total weight of the green phosphor is 1~25 wt %.

Please replace the paragraph beginning on page 5, line 1 with the following amended paragraph:

A plasma display panel according to still another aspect of the present invention includes a plurality of electrodes arranged with having a first and a second sustain electrode form a pair on an upper substrate; a plurality of data electrodes arranged on a lower substrate to cross the electrodes; a plurality of barrier ribs arranged in parallel to the data electrodes with a designated gap to form a discharge space between the upper substrate and the lower substrate; and a

plurality of phosphorus layers having a red phosphorus layer, a green phosphorus layer and a blue phosphorus layer which are formed along the inner wall of the barrier ribs, and wherein the green phosphorus layer is made of $\text{Zn}_2\text{SiO}_4\text{:Mn}$ phosphor, $(\text{Y}, \text{Gd})\text{BO}_3\text{:Tb}$ phosphor and ~~$\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$~~ $\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$ phosphor, and the mixing rate of ~~$\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$~~ $\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$ phosphor to the total weight is 1~25 wt %.

Please replace the paragraph beginning on page 5, line 16 with the following amended paragraph:

A plasma display panel according to still another aspect of the present invention includes a plurality of electrodes arranged with having a first and a second sustain electrode form a pair on an upper substrate; a plurality of data electrodes arranged on a lower substrate to cross the electrodes; a plurality of barrier ribs arranged in parallel to the data electrodes with a designated gap to form a discharge space between the upper substrate and the lower substrate; and a plurality of phosphorus layers having a red phosphorus layer, a green phosphorus layer and a blue phosphorus layer which are formed along the inner wall of the barrier ribs, and wherein the green phosphorus layer is made of $\text{Zn}_2\text{SiO}_4\text{:Mn}$ phosphor, $(\text{Y}, \text{Gd})\text{BO}_3\text{:Tb}$ phosphor and ~~$\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$~~ $\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$ phosphor, and the mixing rate of the $(\text{Y}, \text{Gd})\text{BO}_3\text{:Tb}$ phosphor to the $\text{Zn}_2\text{SiO}_4\text{:Mn}$ phosphor is 25~80 wt %.

Please replace the paragraph beginning on page 6, line 7 with the following amended paragraph:

Herein, the mixing rate of the ~~BaAl₁₂O₁₉:Mn~~ BaAl₁₂O₁₉:Mn phosphor to the total weight of the green phosphorus layer is 1~25 wt %.

Please replace the paragraph beginning on page 6, line 11 with the following amended paragraph:

A green phosphor according to still another aspect of the present invention includes a mixed phosphor composed of a first class phosphor of Zn₂SiO₄:Mn, a second class phosphor of at least one of LaPO₄:Tb, Y₃Al₃(BO₃)₄Tb, ~~Y(Al, Ga)₅O₁₂:Tb~~ Y(Al, Ga)₅O₁₂:Tb, YBO₃:Tb, (Y, Gd)BO₃:Tb, and a third class phosphor of at least one of ~~BaAl₁₂O₁₉:Mn~~ BaAl₁₂O₁₉:Mn, ~~BaAl₁₄O₂₃:Mn~~ BaAl₁₄O₂₃:Mn, Ba(Sr,Ma)AlO:Mn, and the mixing rate of the third class phosphor to the total weight of the mixed phosphor is 1~25 wt %.

Please replace the paragraph beginning on page 6, line 19 with the following amended paragraph:

A green phosphor according to still another aspect of the present invention includes a mixed phosphor composed of a first class phosphor of Zn₂SiO₄:Mn, a second class phosphor of at least one of LaPO₄:Tb, Y₃Al₃(BO₃)₄Tb, ~~Y(Al, Ga)₅O₁₂:Tb~~ Y(Al, Ga)₅O₁₂:Tb, YBO₃:Tb, (Y,

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Gd)BO₃:Tb, and a third class phosphor of at least one of ~~BaAl₁₂O₁₉:Mn~~ BaAl₁₂O₁₉:Mn, ~~BaAl₁₄O₂₃:Mn~~ BaAl₁₄O₂₃:Mn, Ba(Sr,Ma)AlO:Mn, and the mixing rate of the second class phosphor to the first class phosphor is 25~80 wt %.

Please replace the paragraph beginning on page 7, line 7 with the following amended paragraph:

A green phosphor according to still another aspect of the present invention has a BAM group phosphor of at least one of BaAl₁₂O₁₉:Mn, BaAl₁₄O₂₃:Mn, Ba(Sr,Ma)AlO:Mn mixed with at least one type of phosphor that has a different composition from the BAM group phosphor, and the mixing rate of the BAM group phosphor to the total weight is 1~25 wt %.

Please replace the paragraph beginning on page 7, line 14 with the following amended paragraph:

A green phosphor according to still another aspect of the present invention includes a mixed phosphor in which a first class phosphor of Zn₂SiO₄:Mn is mixed with a second class phosphor of at least one of LaPO₄:Tb, Y₃Al₃(BO₃)₄Tb, ~~Y(Al, Ga)₅O₁₂:Tb~~ Y(Al, Ga)₅O₁₂:Tb, YBO₃:Tb, (Y, Gd)BO₃:Tb, and the mixing rate of the second phosphor to the first class phosphor is 25~80 wt %.

Please replace the paragraph beginning on page 7, line 21 with the following amended paragraph:

Herein, the mixed phosphor further includes a third class phosphor of at least one of ~~BaAl₁₂O₁₉:Mn~~ BaAl₁₂O₁₉:Mn, ~~BaAl₁₄O₂₃:Mn~~ BaAl₁₄O₂₃:Mn, Ba(Sr,Ma)AlO:Mn.

Please replace the paragraph beginning on page 8, line 1 with the following amended paragraph:

A plasma display panel according to still another aspect of the present invention includes a plurality of electrodes arranged with having a first and a second sustain electrode form a pair on an upper substrate; a plurality of data electrodes arranged on a lower substrate to cross the electrodes; a plurality of barrier ribs arranged in parallel to the data electrodes with a designated gap to form a discharge space between the upper substrate and the lower substrate; and a plurality of phosphorus layers having a red phosphorus layer, a green phosphorus layer and a blue phosphorus layer which are formed along the inner wall of the barrier ribs, and wherein the green phosphorus layer is composed of a first class phosphor of Zn₂SiO₄:Mn, a second class phosphor of at least one of LaPO₄:Tb, Y₃Al₃(BO₃)₄Tb, ~~Y(Al, Ga)₅O₁₂:Tb~~ Y(Al, Ga)₅O₁₂:Tb, YBO₃:Tb, (Y, Gd)BO₃:Tb, and a third class phosphor of at least one of ~~BaAl₁₂O₁₉:Mn~~ BaAl₁₂O₁₉:Mn, ~~BaAl₁₄O₂₃:Mn~~ BaAl₁₄O₂₃:Mn, Ba(Sr,Ma)AlO:Mn, and the mixing rate of the third class phosphor to the total weight is 1~25 wt %.

Please replace the paragraph beginning on page 8, line 19 with the following amended paragraph:

A plasma display panel according to still another aspect of the present invention includes a plurality of electrodes arranged with having a first and a second sustain electrode form a pair on an upper substrate; a plurality of data electrodes arranged on a lower substrate to cross the electrodes; a plurality of barrier ribs arranged in parallel to the data electrodes with a designated gap to form a discharge space between the upper substrate and the lower substrate; and a plurality of phosphorus layers having a red phosphorus layer, a green phosphorus layer and a blue phosphorus layer which are formed along the inner wall of the barrier ribs, and wherein the green phosphorus layer is composed of a first class phosphor of $\text{Zn}_2\text{SiO}_4\text{:Mn}$, a second class phosphor of at least one of $\text{LaPO}_4\text{:Tb}$, $\text{Y}_3\text{Al}_3(\text{BO}_3)_4\text{:Tb}$, $\text{Y}(\text{Al}, \text{Ga})_5\text{O}_{12}\text{:Tb}$, $\text{Y}(\text{Al}, \text{Ga})_5\text{O}_{12}\text{:Tb}$, $\text{YBO}_3\text{:Tb}$, $(\text{Y}, \text{Gd})\text{BO}_3\text{:Tb}$, and a third class phosphor of at least one of ~~$\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$~~ , $\text{BaAl}_{12}\text{O}_{19}\text{:Mn}$, ~~$\text{BaAl}_{14}\text{O}_{23}\text{:Mn}$~~ , $\text{BaAl}_{14}\text{O}_{23}\text{:Mn}$, $\text{Ba}(\text{Sr}, \text{Ma})\text{AlO:Mn}$, and the mixing rate of the second class phosphor to the first class phosphor is 25~80 wt %.

Please replace the paragraph beginning on page 10, line 16 with the following amended paragraph:

The present invention, in order to solve the problem of ZSM, a green phosphor, which is generally used, realizes the green phosphor by mixing a first class phosphor, a second class

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phosphor and a third class phosphor, and determines the optimal mixing rate of the mixed phosphor on the basis of the result of experiment. Herein, the first class phosphor is $\text{Zn}_2\text{SiO}_4:\text{Mn}$, the second class phosphor is at least one of $\text{LaPO}_4:\text{Tb}$, $\text{Y}_3\text{Al}_3(\text{BO}_3)_4\text{Tb}$, $\text{Y}(\text{Al}, \text{Ga})_5\text{O}_{12}:\text{Tb}$, $\text{Y}(\text{Al}, \text{Ga})_5\text{O}_{12}:\text{Tb}$, $\text{YBO}_3:\text{Tb}$, $(\text{Y}, \text{Gd})\text{BO}_3:\text{Tb}$, and the third class phosphor is at least one of $\text{BaAl}_{12}\text{O}_{19}:\text{Mn}$, $\text{BaAl}_{12}\text{O}_{19}:\text{Mn}$, $\text{BaAl}_{14}\text{O}_{23}:\text{Mn}$, $\text{BaAl}_{14}\text{O}_{23}:\text{Mn}$, $\text{Ba}(\text{Sr}, \text{Ma})\text{AlO}:\text{Mn}$.